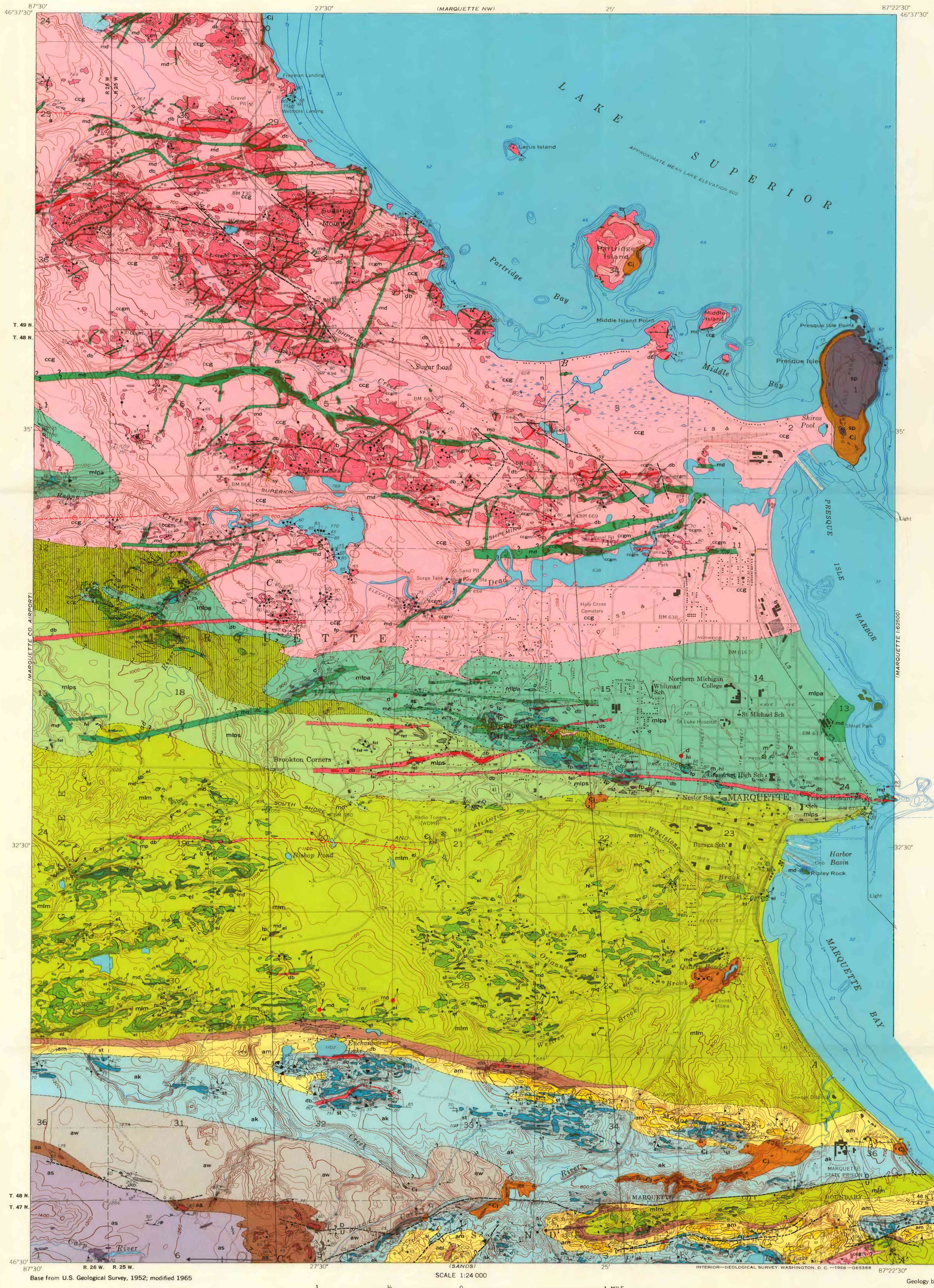
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 397
PLATE 1



Base from U.S. Geological Survey, 1952; modified 1965

SCALE 1:24 000

1 ½ 0 1 MILE

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1968—G65388

Geology by J. E. Gair, R. E. Thaden, and B. F. Jones, 1957–59

EXPLANATION

Exposed areas shown by darker shade

CAMBRIAN

Cj — Jacobsville Sandstone
Red to reddish-brown friable lenticular sandstone containing intercalated lenses of red or gray conglomerate and red shale

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Keweenawan Series

db — Diabase
Mainly massive dark-gray medium-grained dike rock having pronounced diabase texture. Black to dark reddish brown on weathered surfaces. Some reddish-green granophyric diabase is more highly altered than the dark-gray diabase. Commonly inversely magnetized and causes negative magnetic anomalies

sp — Serpentinized peridotite
Massive dark-green rock; conspicuous blocky jointing in most places. Weathers black, dark green, light green, reddish brown, or yellowish brown. Locally cut by networks of serpentine or carbonate veins. May be of early Keweenawan age

Age relation and relative stratigraphic positions uncertain

sy — Syenite
Salmon or dull red massive to well-foliated feldspathic (trachytic) rock and red-green porphyritic hornblende-feldspar rock; some weathers dark gray. Forms thin dikes

hl — Hornblende lamprophyre
Green rocks containing euhedral phenocrysts of hornblende in groundmass of feldspar and hornblende. Forms thin sills and dikes

mp — Metapyroxenite
Medium- to coarse-grained hornblende-rich rock. Some hornblende clearly pseudomorphic after pyrozene. Forms small bodies, some isolated and some adjacent to associated larger masses of metadiabase. Some shown by letter symbol only

md — Metadiabase and metagabbro
Green to dark-green generally medium- to coarse-grained rock. Forms dikes, irregular-shaped bodies, and one pluglike mass that underlies Picnic Rocks. Many thin dikes cutting Compeau Creek Gneiss are fine grained. Locally the coarse-grained metadiabase or metagabbro is green and white or, at Picnic Rocks, green and salmon from the intergrowth of hornblende and feldspar

fp — Felsic porphyry
Pale-salmon to pale-gray porphyritic rock. Forms mainly thin dikes and sills. Generally weathers pale pink. In places grades into slightly porphyritic granitoidlike rock

Menominee Group

as — Siamo Slate
Laminated and nonlaminated dark-gray quartzose, sericitic or sericitic-chloritic slates, and dark-gray generally thin interbedded quartzite. Slates commonly weather to ferruginous material having rusty-brown colors. Thickness not determined

aa — Ajibik Quartzite
Vitreous medium-grained thin- to thick-bedded quartzite and some thin interbeds of sericitic or sericitic-chloritic slate and quartzitic siltite. Weathers light gray, pink, pale reddish brown, or tan. Locally has reddish-brown or yellowish-brown ferruginous spots, ½–½ inch in diameter. Matriz contains minor amounts of sericite and hematite. Thin bed of conglomerate at base of formation SE¼ sec. 6, T. 47 N., R. 25 W.

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Animikie Series

Chocolay Group

aw — Wewe Slate
Gray and greenish-gray laminated and nonlaminated sericite-chlorite-quartz slates. Some of the slates weather to yellow-brown or rusty ferruginous rock

qt ak a st si — Kona Dolomite
Mainly tan, salmon, pinkish- or pale-gray fine- and medium-grained massive dolomite or thinly laminated chert and dolomite. Dolomite layers commonly contain scattered detrital quartz. Maroon, gray, and green sericitic slate in lower part of formation.
si, *slate in thin layers*
qt, *red quartzite and dolomitic quartzite in thin layers*
st, *orange and brown laminated siltite in thin layers*
a, *algal structures common in places*
si, *silicified locally*

am — Mesnard Quartzite
Vitreous medium-grained thin- to thick-bedded quartzite. Weathers white to light pink. Locally brecciated; secondary hematite cements breccia fragments. Locally crossbedding or ripple marks

ael — Enchantment Lake Formation
Conglomerate, fine-grained graywacke, wacke, arkose, subarkose, sericitic slate, sericitic quartzite, and quartzite. All lithologies not found in any one part of the section

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PRECAMBRIAN

ccgm ccg qv — Compeau Creek Gneiss
Foliated light-colored tonalite and granodiorite, and small amounts of monzonite, quartz monzonite, and granite. Locally also forms granitoid dikes in Mona Schist. Mainly pink or salmon. Faint streaky layering in many places. Widespread but small amounts of amphibolite and well-layered amphibolite gneiss. Locally amphibolite or tonalite rich in hornblende or biotite is abundant. qv, *quartz veins,* ccgm, *local septa of greenschist interpreted as remnants of Mona Schist*

Mona Schist

mlpa ag el m fel mlps — Lighthouse Point Member
mlpa, *amphibolitic schist*
m, *interlayered massive metabasalt (?)*
el, *ellipsoidal greenstones*
ag, *mafic agglomerate*
mlps, *chloritic and felsitic schists and slates*
fel, *felsite*

fel el mlm sl — Lower member
mlm, *mainly schistose and massive metabasalt, and actinolitic and chloritic schists*
fel, *felsite*
el, *ellipsoidal greenstone*
sl, *chloritic slate*

m — Limit of outcrop or outcrop area
Varieties of rock too limited in exposure to show at map scale indicated by dot at point of observation; letter indicates type of rock

Contact
Long dashed where approximately located; short dashed where inferred; queried where doubtful

U D — Fault
Long dashed where approximately located; short dashed where inferred; queried where doubtful. U, *upthrown side;* D, *downthrown side; arrows indicate relative horizontal movement*

Anticline
Showing approximate trace of axial plane and direction of plunge of axis

Syncline
Showing approximate trace of axial plane and direction of plunge of axis

FA 35 — Plunge of fold axis

FA — Strike of horizontal fold axis

75 — Strike and dip of beds
Includes strike and dip of layers in gneiss or in Lighthouse Point Member of Mona Schist, and some possibly overturned beds

80 — Strike and dip of overturned or probable overturned beds

Strike of vertical beds

85 — Strike and dip of wavy layering in greenstone

Top of beds shown by crossbedding

Top of beds shown by ripple marks

Top of beds shown by ellipsoidal structures in greenstone

85 — Strike and dip of foliation in lower Precambrian rocks and of cleavage in middle Precambrian rocks

Strike of vertical foliation in lower Precambrian rocks and of vertical cleavage in middle Precambrian rocks

50 — Bearing and plunge of lineation

Strike of horizontal lineation

40 60 — Strike and dip of foliation or cleavage, and plunge of lineation

70 — Strike and dip of joints

Strike of vertical joints

80 — Vein or dike, showing dip

Note: Structure symbols not within limits of outcrop refer to nearest outcrop

Inclined drill hole

x — Test pit
Shallow exploration shafts in sec. 1, T. 47 N., R. 25 W. and sec. 32, T. 48 N., R. 25 W.

Abandoned quarry

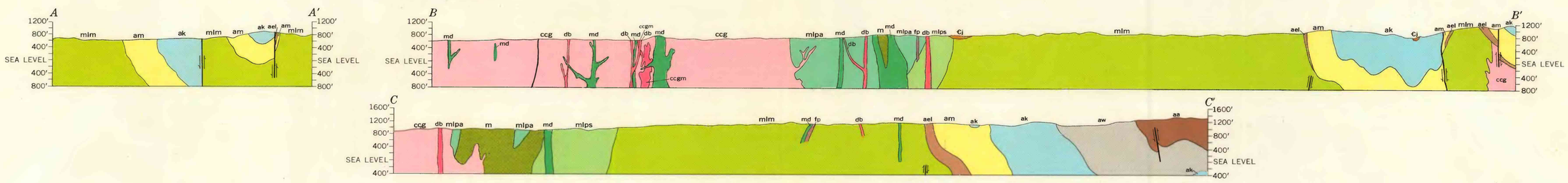
Abandoned mine

f — Crest of positive magnetic anomaly. Letter refers to anomaly in profiles on plate 7

g — Crest of negative magnetic anomaly. Letter refers to anomaly in profiles on plate 7

a — Inferred extension of diabase dike along crest of negative aeromagnetic anomaly. Letter refers to anomaly in profile on plate 7

APPROXIMATE MEAN DECLINATION, 1968



GEOLOGIC MAP AND SECTIONS OF THE MARQUETTE QUADRANGLE, MARQUETTE COUNTY, MICHIGAN